

New Species of Geometridæ. (No. 4.)

BY GEO. D. HULST.

Heterolocha? Snoviaria, sp. nov.

Expands 28 mm. Head, thorax and abdomen ocher, the abdomen slightly lighter than the other parts. Antennæ smoky ocher. Fore wings deep ocher, loosely and somewhat irregularly dusted with dark brown specks. A dark fuscous, almost black line, rather irregularly scalloped, beginning on costa just within apex and reaching the inner margin two-thirds out from base; the points of the scallops are turned outward, and each one has in its sinus a white space forming thus a broken white line. The dark scalloped line is distinct on outer edge, indistinct on inner, and fades gradually into the ground color. Discal point fine, black. Fringe whitish with indistinct smoky spaces between the veins. Hind wings white, with a faint ocher tinge, immaculate. Beneath much as above, but with surface smoother, more indistinct, the outer space on fore wings lighter, the inner more fuscous.

1 ♂, N. Mex. The insect was received by me from Prof. F. H. Snow of the University of Kansas in whose honor I give it its specific name. He stated that it was not a unique, but I am not aware how many other specimens he may have.

Eois parvularia, sp. nov.

Expands 12 mm. Head, thorax and abdomen dull fuscous brown. Wings clay white overlaid with fuscous. A faint basal cross line, a more decided cross line on the outer space, beginning three-fourths out upon the costa and reaching the inner margin two thirds out. This line is slightly bent, strongly wavy. This is followed by a band of even width of a color somewhat darker than the general color of the wing. Discal points faint. Hind wings small with the lines and bands of the fore wings continued. Beneath as above, with the outer band a little more marked.

1 ♂, 2 ♀♀, Texas.

Eois? scintillularia.

Expands 10 mm. Head dusky ferruginous. Thorax and abdomen dark smoky ocher, the abdomen with indistinct darker annulations. Fore wings brownish, overlaid with dove color to just beyond black discal point where the color terminates in a faint ferruginous line running parallel with outer margin; another faint submarginal line of the same color. Space beyond the first line yellowish, somewhat clouded. Hind wings reddish brown at base, slightly washed with dove color, reaching to discal spot, which is dark indistinct; the rest of the wing yellowish with a curved bright narrow line just beyond discal point, and a broad line or narrow band of the same color in submarginal space parallel with outer margin. Beneath the same general markings repeated in fuscous and light ocher.

1 ♂, Fla. Presented to me by Mr. Wm. Beutenmüller. This insect is probably the smallest of all our Geometers. It is decidedly pretty and peculiar. I place it provisionally in *Eois*, although it is generically distinct from anything I know.

Cleora punctomacularia, sp. nov.

Expands 40 mm. All the parts of an even smoky blue gray or dove color. Fore wings with a hardly determinate inner line with its position however marked by the black short streak on each vein. Discal spot black subquadrate, somewhat diffuse; an outer row of black points on veins nearly parallel with outer margin. A marginal line of black points. Hind wings with an outer curved row of black points, a broken black marginal line. Beneath gray with a russet shading on fore wings anteriorly.

2 ♂♂, 2 ♀♀, Cal., Vancouver Is. This species was, I think, known to Dr. Packard, but was probably regarded as a varietal form of *C. nigrovenaria*. I have no doubt however of its specific distinctness as the direction, as well as the location of the indicated lines do not at all agree with those of *C. nigrovenaria*, Pack.

Cleora atrifasciata, sp. var.

Expands 43 mm. Palpi blackish; front light ochreous; collar fuscous; thorax smoky ocher; abdomen ocher, somewhat fuscous, with fuscous dash on dorsum on each segment. Wings light ocher, edged brokenly with dark brown along costa. At the middle a broad black band reaching across wing; inner edge irregularly waved, somewhat bent inwardly; outer edge waved, strongly bent outwardly at middle; a fuscous spot along costa near apex; a broken black marginal line. Hind wings with less of an ocher shading than front wings; an intramedian cross line, blackish, obsolete anteriorly, bent at middle outwardly, the whole wing dusted more or less with fuscous, especially within the median line. A marginal line of black points. Discal point faint. Beneath light ocher, discal point prominent. Black band of fore wings indistinct clouded fuscous.

1 ♀, Cal. I am quite of the opinion that this may be an aberration of some known species, probably of *C. unbrosaria*, Pack., or *C. venaria*, Grt.

Boarmia furfuraria, sp. nov.

Expands 42 mm. Head and thorax gray. Abdomen fuscous. Wings all light gray overlaid with striations and washings of fuscous, the washings shaping themselves into an indistinct outer scalloped band; faint indications of a bent median band shown by undecided blackish points. Discal spots black, distinct on hind wings, a marginal line of black points on all wings. Beneath very white gray, almost white, the forewings somewhat washed with fuscous.

3 ♂♂, Col.

Boarmia atrolinaria, sp. nov.

Expands 35 to 38 mm. Palpi black, third segment white; front white. Antennæ black above, gray beneath; thorax gray with black edge in front; collar light gray; abdomen black and gray, banded on anterior segments, gray with black spots on dorsum on posterior segments. Wings light to dark gray. Basal line rounded, geminate. Middle field lighter than other parts, median line faint, running through discal spot, which is oval; outer line distinct, black, wavy dentate, not much bent or angulated; outer field with reddish shade. Hind wings with faint almost obsolete median line. Outer line scalloped, some angulated at middle, outer field with faint

waves of white and gray. Beneath dirty gray; a median line on all wings of distinct black points. Discal spot on fore wings black, rather large.

1 ♂, 1 ♀, Ky. Nearest to *B. pamfiliaria*.

***Boarmia fuliginaria*, sp. nov.**

Expands 35 mm. The whole insect above and below is of a dark smoky brown color. On all wings the black discal spots show faintly, and on the fore wing, just beyond disk, are three lengthened black spots faintly showing at base of veins 2, 3, and 4. Hind wings with faint indeterminate black points near center of wing. Beneath unicolorous, a little less dull smoky than above.

1 ♂, Ill. This may possibly be a case of melanism, but if so I am unable to tell to which one of our common species this referred peculiar form should be.

***Boarmia Fernaldaria*, sp. nov.**

Expands 40 mm. Ground color uniformly a light gray formed of a white base overlaid with tenuous scales. Body brown, or gray and dark gray ringed. Base of wing, brown, with an olivaceous tint, lines as in *B. crepuscularia*. Beyond third line is a broad band of even width across the wing, brown or olivaceous in color. Beneath, almost white, the brown band faintly showing through.

2 ♂♂, 1 ♀, Me. Named in honor of Mrs. C. H. Fernald of Amherst, Mass., to whom I owe my first specimen of this insect, and to whom I am grateful for other favors. The insect in its lines approaches very near to *B. crepuscularia*, but the band is very distinctive. It may possibly be an aberration or variety of that species.

***Boarmia floridaria*, sp. nov.**

Expands 17 mm. Head, thorax and abdomen, smoky blue-gray. Three fine black lines cross the fore wings, all of them being bent and wavy. The basal is strongly bent out near costa and inward near inner margin; the second, which includes the discal spot, has a sharp bend at middle; the outer has two sharp bends outwardly near middle. These lines are nearly equidistant from each other and subparallel. Hind wings with the two outer lines continued both bent, wavy, dentate. Beneath, even smoky gray.

1 ♂, 1 ♀, Fla.

***Boarmia Wrightiaria*, sp. nov.**

Expands 28 mm. Head, thorax and abdomen, light clear gray. Wings unevenly gray; lines of fore wings very oblique, the outer with a large bend inwardly near inner margin; both discal and outer lines geminate; basal line wanting; discal spot black; a submarginal blackish line edged outwardly with whitish. Hind wings with faint parallel median and submarginal shadings; discal spots black. Fore wings with inner angle rounded and outer margin very oblique. Hind wings very much rounded with a notch at end of vein 5. Antennæ longer than usual, heavily pectinated almost to end. Beneath even dark fuscous with black discal points.

4 ♂♂. Taken at San Bernardino, Calif. Named in honor of Mr. W. G. Wright who has helped very much to give a knowledge of the insects of S. California and to whom I am under obligation for many favors. The insect looks much like a *Lepiodes*.

Boarmia? plumogeraria, sp. nov.

Expands 44 mm. Palpi very short, these with head and thorax dark gray. Antennæ half the length of the fore wing, very lengthily and evenly pectinated to the end. Fore wings dark gray; a dark basal and median line both broad and rounded inwardly, and both very faint; outer line more distinct, narrow, wavy, straight, nearly parallel with outer margin, passing just beyond black discal spot; a submarginal line broad, quite faint; marginal line black. Hind wings slightly lighter than the fore wings, a broad median line passing through black discal spot, and a broad submarginal line. Beneath, nearly as above, but less determinate.

1 ♂, Cal. I saw specimens also in the collection of Mr. W. G. Wright of San Bernardino, Cal. The insect is not a typical *Boarmia*, and is easily known by its plumose antennæ in which it surpasses any other American Geometer.

Tephrosia Texanaria, sp. nov.

Expands 24 mm. Head parts dark fuscous to gray. Thorax, abdomen and wings olivaceous gray. Fore wings with three lines, the basal even rounded, the medium fainter discal, the outer clear distinct, fine, wavy and curved just beyond disk; three black spots on costa at end of veins; the outer line is edged outwardly with light gray, and this is followed by a reddish band; a submarginal wavy whitish line and a row of black marginal points. Hind wings correspond with the fore wings, the lines and colors continuing, except that the basal line is wanting. Beneath, in markings much as above, but smoother, less distinct, and without any reddish.

8 ♂♂, 6 ♀♀, Texas.

Tephrosia fautaria, sp. nov.

Expands 30 to 32 mm. Head and thorax reddish ochreous; abdomen ocher, fore wings light ocher to reddish ocher, loosely striated with blackish. Hind wings lighter. All wings with an outer line of black points parallel with outer margin, one point on each vein; discal spots black; a marginal row of black points on all wings. Beneath as above or with black points obsolete.

4 ♂♂, 2 ♀♀, Calif.

Tephrosia celataria, sp. nov.

Expands 32 mm. Palpi ochreous fuscous. Head, antennæ and thorax, fuscous gray. Abdomen ocher, somewhat fuscous on anterior segments. Fore wings gray, finely powdered and striated with black; discal point small, black; marginal line of black points. Hind wings light gray, finely but not heavily peppered and striated with black; discal spot black, small; marginal line of black points. Beneath, even smoky gray, somewhat darker along costa.

2 ♂♂, Havilah, Calif.

Tephrosia carnearia, sp. nov.

Expands 26 to 30 mm. Head and thorax reddish ocher; abdomen the same or ocher. Fore wings rounded, broad, reddish ocher to maroon reddish, most decided on the middle and outer fields; an indistinct fuscous band, extra basally, another extra discally; an apical submarginal fuscous clouding; discal spots black, small. Hind wings ocher with some fine blackish striations, especially outwardly; outer and anal marginal spaces reddish; a row of black spots on margin.

Beneath, ocher, somewhat dusted with black, costal margin reddish; discal spots black, small. ♀ larger, with more of a violet shading, and this not so distinct.

2 ♂♂, 2 ♀♀, Calif.

Tephrosia Nevadaria, sp. nov.

Expands 30 mm. Head and thorax bright ochreous; abdomen ochreous fuscous. Antennæ much more finely pectinated than is usual. Fore wings even ochreous fuscous to outer line; inner lines wanting, outer line broad, band-like, even, parallel with outer margin; beyond this line an ochreous space, then to margin fuscous; discal spot black, distinct. Hind wings light gray, finely striated with ocher fuscous; discal spot distinct; a marginal row of black points on all wings. Beneath as above with all wings lighter, except along costal and outer margins of fore wings.

1 ♂, Sierra Nevada Mountains, Calif.

Hemerophila Packardaria, sp. nov.

Expands 31 mm. All the parts generally of a dark fuscous color, formed by a light fuscous ground, generally but squamously covered with black atoms. Discal point of fore wings white, annulated with black; lines two, both very oblique, the inner median, faint, the outer extra discal, distinct, rounded out at middle, reaching costa just within apex, and inner margin at middle, edged outwardly with a light line; a faint submarginal light line; marginal line of black points; fringe interlined. Hind wings unevenly scalloped on outer edge, with discal point black or inclosing white point; a black median line, distinct, subparallel with outer margin slightly angulated and edged outwardly with white. A light, rather faint submarginal line; margin black; fringes interlined. Beneath, nearly even dark fuscous; discal points whitish annulated.

4 ♂♂, Calif. Named in honor of Dr. A. S. Packard, who, more than any other, has advanced our knowledge of the *Geometridæ* of N. A., and to whom I make grateful acknowledgment of assistance.

Semiothisa cæsiaria, sp. nov.

Expands 22 mm. Uniformly even squamose gray. Fore wings with three lines; the basal and median heavy, black, diffuse, approximate, parallel; the median includes the discal point, which is white annulate with black; the third line is fine, faint, sometimes obsolete, with a large sinus on anterior half. Three black spots on costa at ends of lines. Hind wings with first two wings continued, but fainter or subobsolete. Beneath, nearly even loose gray.

2 ♂♂, 2 ♀♀, Eastern U. S. I have often had this insect sent me, and have with much suspicion looked upon it as a form of *S. ocellinata*, Guen. The shape of the wings is however different, as well as the position and direction of lines. It is also a stouter though a smaller insect. I have often found it at rest on the trunks of Willows, and have little doubt, that tree is the food plant of the larva.

Aspilates unicoloraria, var. nov.

I give this name to a variation of *A. desperaria*, which seems to be quite prevalent in Colorado. The insect is of the same general color as *desperaria*, but the lines are obsolete, and the whole surface of the wings is of a loose striated fuscous color laid upon light gray.